AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A method for calculation of filtered channel estimation values in radio systems, comprising :

determining a sequence of unfiltered channel estimation values;

selecting a specific set of filter coefficients from two or more filter coefficient sets, with the filter coefficients being calculated on the basis of the MMSE optimality criterion for a predetermined recursive digital filter; and

filtering of the sequence of unfiltered channel estimation values by means of the recursive digital filter using the selected filter coefficients in order to calculate the filtered channel estimation values.

2. (Original) The method according to Claim 1, wherein the specific set of filter coefficients is selected as a function of the relative speed between the transmitter and the receiver and of the signal-to-interference and noise ratio.

3. (Previously Presented) The method according to Claim 1, wherein sets of filter coefficients are calculated for different relative speeds between the transmitter and the receiver and for any desired signal-to-interference and noise ratio, and wherein the selection and filter steps comprises:

selecting a specific set of filter coefficients as a function of the relative speed between the transmitter and the receiver; and

filtering of sequences of unfiltered channel estimation values which are associated with different transmission paths, using the filter coefficients of the same selected specific set.

4. (Original) The method according to Claim 3, wherein the filter coefficients of said sets are calculated by averaging over various values of the signal-to-interference and noise ratio in the MMSE optimization process.

5. (Previously Presented) An apparatus for calculation of filtered channel estimation values in radio systems, comprising:

means for determination of a sequence of unfiltered channel estimation values, and

means for selection of a specific set of filter coefficients from two or more filter coefficient sets, with the filter coefficients being calculated on the basis of the MMSE optimality criterion for a predetermined recursive digital filter, wherein the predetermined recursive digital filter for filtering of the sequence of unfiltered channel estimation values uses the selected filter coefficients in order to calculate the filtered channel estimation values.

6. (Original) The apparatus according to Claim 5, wherein the means for selection of the specific set of filter coefficients is designed to carry out the selection process as a function of the relative speed between the transmitter and the receiver and of the signal-to-interference and noise ratio.

7. (Previously Presented) The apparatus according to Claim 5, further comprising:

two or more sets of filter coefficients, with each set being calculated for a specific relative speed between the transmitter and the receiver and for any given signal-to-interference and noise ratio, and wherein

the means for selection of a specific set of filter coefficients is designed to make the selection as a function of the relative speed between the transmitter and the receiver,

two or more digital filters are provided for filtering sequences of unfiltered channel estimation values which are each associated with different transmission paths, and

the filters are configured using the same filter coefficients from the selected set.

8. (Original) The apparatus according to Claim 7, wherein the filter coefficients of said sets are calculated by averaging over different values of the signal-to-interference and noise ratio during the MMSE optimization.

9. (Previously Presented) A method for calculation of filtered channel estimation values in radio systems, comprising:

calculating filter coefficients on the basis of the MMSE optimality criterion for two or more filter coefficient sets for a predetermined recursive digital filter;

determining a sequence of unfiltered channel estimation values;

selecting a specific set of filter coefficients from said filter coefficient sets; and

filtering the sequence of unfiltered channel estimation values by means of the recursive digital filter.

10. (Original) The method according to Claim 9, wherein the specific set of filter coefficients is selected as a function of the relative speed between the transmitter and the receiver and of the signal-to-interference and noise ratio.

11. (Previously Presented) The method according to Claim 9, wherein sets of filter coefficients are calculated for different relative speeds between the transmitter and the receiver and for any desired signal-to-interference and noise ratio, and wherein the selection and filter steps comprises the steps of:

selecting a specific set of filter coefficients as a function of the relative speed between the transmitter and the receiver; and

filtering of sequences of unfiltered channel estimation values which are associated with different transmission paths, using the filter coefficients of the same selected specific set.

12. (Original) The method according to Claim 11, wherein the filter coefficients of the sets are calculated by averaging over various values of the signal-to-interference and noise ratio in the MMSE optimization process.

13. (Previously Presented) An apparatus for calculating filtered channel estimation values in a radio system, comprising:

a determiner configured to determine a sequence of unfiltered channel estimation values;

a recursive digital filter configured to filter the unfiltered channel estimation values in order to calculate the filtered channel estimation values, the recursive digital filter being configured to use a specific one from two or more filter coefficient sets; and

a selector configured to select the specific set of filter coefficients from the two or more filter coefficient sets, with the filter coefficients being calculated based on the MMSE optimality criterion for the recursive digital filter.

14. (Previously Presented) The apparatus according to claim 13, wherein the filter coefficients of said sets are calculated by averaging over various values of the signal-to-interfere and noise ratio in the MMSE optimization process.

15. (Previously Presented) An apparatus for calculating filtered channel estimation values in radio systems, comprising:

a determiner configured to determine a sequence of unfiltered channel estimation values; and

a selector configured to select a specific set of filter coefficients from two or more filter coefficient sets, the filter coefficients being calculated based on the MMSE optimality criterion for a predetermined recursive digital filter, wherein the predetermined recursive digital filter is configured to filter the sequence of unfiltered channel estimation values using the selected filter coefficients in order to calculate the filtered channel estimation values.

16. (New) The method according to Claim 1, wherein

each set of the two or more filter coefficient sets is independent of the signal-to-interference-and-noise ratio; and

each set of the two or more filter coefficient sets is calculated such that the respective set of filter coefficients minimizes a sum of error deviations at two or more different values of the signal-to-interference-and-noise ratio, wherein an error deviation is defined as the distance between

the mean square error of the respective set of filter coefficients at a fixed signal-to-interference-and-noise ratio, and

the respective optimally obtainable mean square error of a set of filter coefficients at the same fixed signal-to-interference-and-noise ratio.

17. (New) The apparatus according to Claim 5, wherein

each set of the two or more filter coefficient sets is independent of the signal-to-interference-and-noise ratio; and

each set of the two or more filter coefficient sets is calculated such that the respective set of filter coefficients minimizes a sum of error deviations at two or more different values of the signal-to-interference-and-noise ratio, wherein an error deviation is defined as the distance between

the mean square error of the respective set of filter coefficients at a fixed signal-to-interference-and-noise ratio, and

the respective optimally obtainable mean square error of a set of filter coefficients at the same fixed signal-to-interference-and-noise ratio.

18. (New) The method according to Claim 9, wherein

each set of the two or more filter coefficient sets is independent of the signal-to-interference-and-noise ratio; and

each set of the two or more filter coefficient sets is calculated such that the respective set of filter coefficients minimizes a sum of error deviations at two or more different values of the signal-to-interference-and-noise ratio, wherein an error deviation is defined as the distance between

the mean square error of the respective set of filter coefficients at a fixed signal-to-interference-and-noise ratio, and

the respective optimally obtainable mean square error of a set of filter coefficients at the same fixed signal-to-interference-and-noise ratio.

19. (New) The apparatus according to Claim 13, wherein

each set of the two or more filter coefficient sets is independent of the signal-to-interference-and-noise ratio; and

each set of the two or more filter coefficient sets is calculated such that the respective set of filter coefficients minimizes a sum of error deviations at two or more different values of the signal-to-interference-and-noise ratio, wherein an error deviation is defined as the distance between

the mean square error of the respective set of filter coefficients at a fixed signal-to-interference-and-noise ratio, and

the respective optimally obtainable mean square error of a set of filter coefficients at the same fixed signal-to-interference-and-noise ratio.

20. (New) The apparatus according to Claim 15, wherein

each set of the two or more filter coefficient sets is independent of the signal-to-interference-and-noise ratio; and

each set of the two or more filter coefficient sets is calculated such that the respective set of filter coefficients minimizes a sum of error deviations at two or more different values of the signal-to-interference-and-noise ratio, wherein an error deviation is defined as the distance between

the mean square error of the respective set of filter coefficients at a fixed signal-to-interference-and-noise ratio, and

the respective optimally obtainable mean square error of a set of filter coefficients at the same fixed signal-to-interference-and-noise ratio.